

SEP 27 1999

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September 22, 1999

Lester Snow, Executive Director
CalFed Bay/Delta Program
1416 Ninth Street, Suite 1155, Sacramento, CA 95814

Dear Executive Director Snow:

Please enter these comments into the formal record for your Draft Programmatic Environmental Impact Report and Statement. Because of the looming crisis in California's water supplies, I urge that you revise the CALFED Bay/Delta program:

- * not commit to building any new or expanded dams, reservoirs, or canals during CALFED's "Stage 1" (the first seven years of the program);
- * improve water quality for people and wildlife by preventing pollution at the source;
- * increase serious investments in water conservation and efficiency, groundwater management, pollution prevention, and drinking water treatment;
- * restore our rivers, bays, and fisheries by providing firm guarantees of more fresh water flows and by caring for the land around our rivers;
- * not make taxpayers subsidize new or expanded dams, reservoirs, or canals.

Major shortcomings of the plan include:

CALFED is considering twelve major new dams or reservoir projects throughout the state. Major dams are one of the main causes of our degraded river systems and water quality, and are far more expensive and environmentally damaging than alternatives such as conservation and groundwater storage. The cost for ground water storage is much cheaper than dams, and results in less water wasted to evaporation from large surfaces.

CALFED's plan calls for construction of the first leg of the peripheral canal within the first five years of the program. The peripheral canal has never been shown to be an environmentally sound option. It failed in 1982 to gain support, and it will fail again, wasting billions of taxpayer dollars and leading to final destruction of the Delta system. (See attached letter sent to Gov. Jerry Brown at that time.)

Public subsidies to build major water projects have been a principal cause of the San Francisco Bay-Delta watershed's environmental decline. It's time to honestly determine how much water is available, and set policy to fairly distribute it within California.

CALFED's plan does not place enough emphasis on the right tools for solving our water problems, such as water conservation, recycling, conjunctive use, and groundwater storage and continues relying on a flawed water needs analysis that artificially inflates future water demand and underestimates the amount of water available. Conservation must be a major goal of the program.

CALFED's plan for improving water quality still falls short. The plan must invest in advanced treatment methods and set more aggressive goals for protecting this state's water resources, eliminating toxics, pesticides and animal wastes from waterways, managing salinity levels, and promoting new drinking water treatment technologies. The arguments that Delta organics require bypass to provide Southern Californians with drinking water is just a "red herring" to frighten the public. The wheeling of water through the delta provides some "natural" restraints to our collective "water greed," and protects the intakes themselves from salinization.

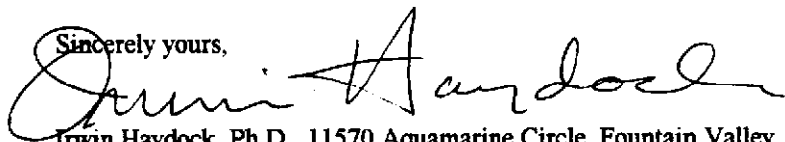
Show us the water! CALFED's plan offers an "environmental water account" to help purchase water to restore aquatic health to the delta system. This good concept is without detailed assurance, and is unacceptable only as a "future promise."

CALFED has put together an outstanding outline of the problems, but has failed to come up with fair and equitable solutions. The one problem future generations will face is that water falling on this state is a finite resource, and we have badly managed it in the past, the present. We need to change this practice for a successful future. We all use too much; we must all learn to live within our water budget, even saving something for the environment and our human future.

Much work remains to be done. Many of the plan's elements represent a good start on such matters as using a systems approach, adaptive management, and comprehensive monitoring assessment and research in guiding the future water program strategy. I stand ready to help with all of the knowledge I have accumulated in almost a half century of water and environmental studies. I am submitting with this letter a copy of my recent comments at a CALFED Public Hearing in Costa Mesa on September 2, 1999.

I am also submitting for your careful consideration a recently published paper by Dr. Michael Rozengurt that encapsulates CALFED's problem. Dr. Rozengurt is one of the few physical oceanographic and hydrographic experts brave enough to put his oar in the waters of the Bay Delta to provide a more honest and rational view of water supplies and environmental effects. His comprehensive two volume work, carried out at the Tiburon Laboratory of Francisco State University in the late 1980s, has yet to surface in any CALFED list of references. His references are no longer available in most state archives(?), but are found in the State Lands Commission's lovely book on California Rivers done somewhat later. Until CALFED has honestly evaluate his study's results, I continue to hold the opinion that the question is not one of developing the optimal system for the environment (including humans) based on the laws of Nature, but simply one that advances political interests leading to the grave detriment our children's children's futures.

Sincerely yours,



Irwin Haydock, Ph.D., 11570 Aquamarine Circle, Fountain Valley, CA 92708

CalFed Public Hearing
September 2, 1999
Costa Mesa, California

My name is Irwin Haydock, a retired California-born boy now living locally in "Fountain" Valley.

Thank you for this opportunity to comment on CalFed's EIR/S. First, I would like to call your attention to written comments made on last year's draft EIR/S, none of which appear to be specifically addressed in the document before us. Please reread my earlier comments, and also consider those made by others before making your final decision.

Tonight, I submit the following observations for your careful and honest consideration.

What's the problem? I have a slide that envisions my thinking. It shows an old man leading a young lad alongside a great California river, as background for the names of six generations of my pioneering family, which arrived in 1856, a decade after the Donner party's disaster. My family has witnessed almost 150-years coming to our now critical water dilemma. I hope summarizing this history can point the way for the future, before disaster overtakes us. We are the problem; we must all change our water ways to survive and prosper in our future.

I believe mine has been a hard-working, honest and giving family. My Great Grandfather Dawson pioneered the fruit-canning industry in the Santa Clara Valley, and the waste pulp depleted the oxygen of small creeks of South San Francisco Bay, resulting in the demise of all salmon; Through the middle of this century, my grandfather Pomeroy's carefully irrigated Sunnyvale orchards produced memorably sweet peaches, prunes and cherries, as he dug the wells deeper each year until Santa Clara's groundwaters finally became severely depleted in the 1950s; My 90-year old father's (James Wesley) late 1930s job was to clear title to lands used to construct Shasta Dam, a good work that eventually blocked hundreds of miles of the huge salmon population's spawning habitat. He tells me the work was done so well the dam's titles will never be challenged; In 1968, I (Irwin Haydock) took a path less traveled, becoming an expert aquatic ecologist, after writing a U.C. Davis Ph.D thesis on rotifers, small planktonic creatures living in the Delta. I have spent the past 30-years trying (unsuccessfully it appears) to providing science-based recommendations for a lasting water future; In the 1980s, my son, Wesley, and Daughter, Marina, decided a more direct approach was the future; one now a ground-water remediation specialist, the other an hydrologist working on Orange County's largest and most innovative wastewater reclamation project yet; I have been recently blessed with my final opportunity. I am now guardian to Ryan, my 14-year old, genius grandson. I plan to spend the rest of my life equipping him to successfully continue my quest.

I have lived equally North and South; it is time we all moved to the center on our water dilemma. We need to honestly determine how much water there is for the future, and how to fairly apportion this among all the real needs of Nature and the human society. This is an Herculean task; this is also the only successful, long term solution. For my part, I pray that God will grant CalFed the strength of David, the bravery of Daniel, and the wisdom of Solomon to finish this most important work. Right now you may feel more like Sisyphus, pushing this rock up that hill over and over again.

I thank CalFed for giving me the opportunity to comment on the current draft EIR/S.

Irwin Haydock, Ph.D.
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June 20, 1980

This letter is being written to apprise you of certain facts which must be considered in your deliberations on the peripheral canal issue currently before the California legislature and being discussed almost daily in the news. This issue has not only statewide, but national significance, as an example of large-scale water development for which important ecological, economical, and social effects have already been demonstrated in similar programs of other nations.

The following facts are apparent to us, as professionals examining the demise of the San Francisco Bay Delta; some of these derive directly from observing the corpses of other similar ecosystems abroad:

1. There should be no further water projects construction, including the peripheral canal, until such time as new cost-benefit analyses have been done and real predictions are made as to the relation between delta out-flow and (a) salt intrusion in Suisun Bay, (b) pollution and waste treatment needs, and (c) productivity in the entire system.
2. There should be no further water withdrawals from the existing Delta pool as history both here and abroad has shown severe economic and environmental damage results from greater than 30 percent reductions in the natural flow.
3. The lack of data to understand this system and to make adequate predictions is appalling and must be corrected immediately by a major research effort. This must lead to a proper monitoring program to prevent future problems. The cost of these programs is estimated as at least \$2. million per year, but this is minuscule compared to the \$11 billion expenditure contemplated for replumbing the system to meet only man's perceived needs.

The primary question which must be answered prior to any further water development (or replumbing) is, "What is the natural limit of the San Francisco Bay-Delta System?" The experience of foreign countries is frightening: diversion of no more than 30 to 50 percent of the natural runoff has led to serious immediate consequences and subsequent successive degradation of resources, including finally the destruction of the diverted water supply itself by salt intrusion. It should be noted that these results did not occur all at once, but developed slowly at first and more rapidly toward the end. Due to inexperience, this result could not be predicted at the outset, but is quite evident now in well documented case histories (see attached list).

The total time span involved in the above events was measured in years, not decades or centuries, from the point of withdrawals beyond 30 percent of the natural outflow. This leads us to predict that, "25-30 percent is nature's limit!" We note with alarm that withdrawals from the San Francisco Bay-Delta exceeded this some years ago and currently exceed 50 percent, with eventual projections scheduled for 75 percent or more of the former natural flows. We predict that the system will collapse long before this point is reached, although we would not be pleased to see this prediction come true.

More to the point, we feel that there is an immediate need to protect the Delta from the already observed salinity intrusions resulting from existing excessive levels of project development. Dams and sills cannot correct this important problem of maintaining a balance of salt and fresh water exchange necessary to sustain natural estuarine conditions created by nature. Other solutions exist and should be examined for their applicability to this important problem.

The peripheral canal, by itself, cannot flush this system and cannot prevent the salt intrusion already occurring with alarming frequency. Such a canal will destroy even more of the natural circulation. This is directly opposite to nature's way of enriching the system with a slow meandering flow and observed flow reversals (due naturally to tides and winds, not pumping activities). A similar channel

downstream. Any change in the course of this vital bloodstream or in the quality of its fluids will lead to change, much of which has already been shown to be detrimental to social and economic as well as ecological systems.

My colleague and I represent almost 50 years of working experience in marine and estuarine biology, hydrology, and oceanography. This experience is directly pertinent to the problems faced today by the San Francisco Bay-Delta ecosystem (our brief biographies are attached).

Our collective experience leads us to state that, without doubt, the final result of further water developments will be economic, social, and ecological ruin for the Bay-Delta region, from the river's entrance into the delta to the coastal zone where the remaining runoff sometimes (less frequently now) exits the San Francisco bay system.

Published results regarding similar water development abroad (the Rivers Don and Kuban, the Volga and Terek, the Dnieper and Dniester, and the Nile and Po, which enter the Azov, Caspian, Black, and Mediterranean Seas, respectively) all point to the inescapable conclusion that no more than 25-30 percent of the natural flow can be diverted without disastrous consequences. The historical, average annual delta outflow tributary to Northern San Francisco Bay was 38 Km³ (1871-1929) and is presently only 19 Km³ - a 50X reduction. A similar reduction occurred in 1923-24 and led to very serious effects even prior to major water developments. This natural lesson should be kept in mind when discussing eventual projections of 75 percent water withdrawals from the San Francisco Bay-Delta in 1990.

The early warning signs of this excessive withdrawal are apparent in the reduced productivity of fish and wildlife resources, increased salinity intrusion affecting municipal and agricultural water supplies, increased effects-of pollution loads in progressively more stagnant waters, and both subtle and gross changes in the delta system's configuration and flow pattern. These impacts are all the same in kind (not yet in degree) as have been thoroughly documented elsewhere. As such, equal or greater disruption to the ecology and basic economy of this system can be expected in the future. Taken together, these findings adequately demonstrate that the costs of eventual-losses, where they are fully known or could be projected, far exceed any short-term benefits gained. More importantly, it has also been demonstrated that many engineering works designed specifically to mitigate prior environmental disruption only exacerbated the problem and accelerated the eventual outcome.

Detailed reports (see attached list) have been published over the past decade which have addressed the problems of water resources development leading to the subsequent destruction of the resource itself.

We are scientists and cannot advise you on the difficult political realities of this general problem. nor can we understand the approach of some engineers: We must build and answer questions later." "Final answers to many of our most perplexing questions must be derived from the construction and operation." This quote was attributed to former DWR Director Harvey Banks in the fifties (New West Magazine, June 16, 1980). We do know that if one follows nature's example, and answers the questions the same manner that nature has, then the result will be safe for both the environment and man.

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Yours very truly

Original signed

Michael Rozengurt

Received his MS (Oceanographic Engineering, 1957) at the Hydrometeorological Institute in Odessa and a PhD (Oceanography, 1969) from the Oceanographic Institute in Moscow, USSR.

For over 20 years he has been associated with research studies of the economic development of fresh water resources, water pollution control, and the relationship of fisheries and oceanography in the Black, Azov., and Caspian Seas of the southern part of the Soviet Union. He has done detailed studies of the Dnieper, Dniester and Danube deltas in the northwestern part of the Black Sea. These studies were especially aimed at determining the natural and anthropomorphic factors which regulate the water-salt balance of these estuaries.

Dr. Rozengurt has written two books, co-authored five others, and also published some 130 scientific papers in his field of investigations.

The most pertinent of these works describe necessary monitoring techniques and the theory of regulating the water-salt balance of complicated estuarine ' ecosystems during economic development of upstream water resources. The use of systems analyses, including economic and ecological models of water balance and development of engineering works to formulate solutions to reduced freshwater flux in estuarine situations is particularly relevant to the San Francisco Bay-Delta problem being discussed today.

Dr. Rozengurt is presently working as an Oceanographer in the Ocean Monitoring and Research Staff of the Los Angeles County Sanitation Districts.

Irwin Haydock

Received his MA (Marine Sciences, 1962) at the University of the Pacific Marine Station (under Dr. Joel Hedgpeth) and PhD (Zoology, 1970) at the University of California, Davis, USA.

For the past decade he has been associated with problems of the ecological effects of waste discharge in the coastal waters of Southern California. He is presently Supervisor of the Los Angeles County Sanitation Districts' Ocean Monitoring and Research Program.

His interest in the San Francisco Bay Delta problems stems from his boyhood in the bay area hunting and fishing in the south bay region. His formal education led him to studies of oyster and oyster culture in California estuaries and, eventually, a PhD thesis on fresh-water rotifers which abound in the Delta system. His schooling in northern California led him into close association with the DWR-CF&G studies of the Delta initiated in the early 1960's and he has closely followed the results as they pertain to the development of the California Water Project to date. He has directed and carried out several studies of large-scale ecosystem manipulation, including the effects of high salinity on the Salton Sea fishery (1968-70) and the effects of waste discharge in the southern California coastal zone (1970-80).